

1           1.     An integrated circuit comprising:  
2                     an amplifier formed on a semiconductor die, the amplifier having an  
3                     output port with an output impedance; and  
4                     a bondwire electrically connecting the output port to an external  
5                     conductor;  
6                     wherein the bondwire has a specified self-inductance and is operable to  
7                     match the output impedance to a desired load impedance.

1           2.     The integrated circuit of claim 1 wherein:  
2                     the amplifier is a radio frequency power amplifier.

1           3.     The integrated circuit of claim 1 wherein:  
2                     the semiconductor die is a metal-oxide semiconductor die.

1           4.     The integrated circuit of claim 1 wherein:  
2                     the semiconductor die is a gallium arsenide semiconductor die.


1           5.     The integrated circuit of claim 1 wherein:  
2                     the semiconductor die is a bipolar semiconductor die.

N.R.H. BLACK P.E.  
420 Miramontes Ave.  
Half Moon Bay  
CA 94019

1           6.     Please cancel claim 6 without prejudice or disclaimer.

1           7.     Please cancel claim 7 without prejudice or disclaimer..

1           8.     An integrated circuit comprising:  
2                     an amplifier formed on a semiconductor die, the amplifier having an  
3                     output port with an output impedance;  
4                     a bondwire having a specified self-inductance and electrically connecting  
5                     the output port to an external conductor; and  
6                     a capacitor having a specified capacitance formed on the semiconductor  
7                     die and electrically connected between the output port and a ground, wherein:  
8                     the bondwire and the capacitor are operable to match the output  
9                     impedance to a desired load impedance.

  
1           9.     The integrated circuit of claim 8 wherein:  
2                     the amplifier is a radio frequency power amplifier.

1           10.    The integrated circuit of claim 8 wherein:  
2                     the bondwire, the capacitor and the desired load impedance are jointly  
3                     operable to resonate at a normal operating frequency of the integrated circuit.

1           11.    The integrated circuit of claim 8 wherein:  
2                     the semiconductor die is a metal-oxide semiconductor die.

1           12.    The integrated circuit of claim 8 wherein:  
2                     the semiconductor die is a gallium arsenide semiconductor die.

1           13.    The integrated circuit of claim 8 wherein:  
2                     the semiconductor die is a bipolar semiconductor die.

1 14. Please cancel claim 14 without prejudice or disclaimer.

1 15. An integrated circuit comprising:

2 an amplifier formed on a semiconductor die, the amplifier having an  
3 output port with an output impedance;

4 a first bondwire having a first specified self-inductance, and electrically  
5 connecting the output port to a first external conductor;

6 a second bondwire having a second specified self-inductance, and  
electrically connecting the first external conductor to a node on the die;

7 a first capacitor having a first capacitance formed on the semiconductor  
8 die and electrically connected between the node and a ground;

9 a second capacitor having a second capacitance embodied on the  
10 semiconductor die and electrically connected between the node and a third  
11 bondwire, the third bondwire having a third specified self-inductance and  
12 electrically connecting the second capacitor to a second external conductor  
13

14 wherein:

15 the first, second and third bondwires and the first and second  
16 capacitors are operable to match the output impedance to a desired load  
17 impedance.

N.R.H. BLACK P.E.  
420 Miramonte Ave.  
Half Moon Bay  
CA 94019

1 16. The integrated circuit of claim 15 wherein:  
2 the amplifier is a radio frequency power amplifier.

1 17. The integrated circuit of claim 15 wherein:  
2 the first capacitor is connected to ground via a further bondwire.

1           18.     The integrated circuit of claim 15 wherein:  
2                   the further bondwire connects to a thermal pad formed within the  
3           integrated circuit.

1           19.     An integrated circuit comprising:  
2                   a semiconductor die;  
3                   a first bondwire having a first self-inductance electrically connected to the  
4           die and to an external conductor;  
5                   a second bondwire having a second self-inductance electrically connected  
6           to the die and to the external conductor, wherein:  
7                   the first and second bondwires are operable to act as an inductor to form at  
8           least a part of a circuit block comprised within the integrated circuit.

*Handwritten signature*

1           20.     The integrated circuit of claim 19 wherein:  
2                   the circuit block is an analog circuit.

1           21.     The integrated circuit of claim 19 wherein:  
2                   the circuit block is a radio frequency circuit.

1           22.     The integrated circuit of claim 19 wherein:  
2                   the circuit block is selected from a list consisting of:

3                   an intra-stage match, an input stage match, a tuned circuit, an  
4           oscillator, a filter, and a pre-selector for a radio receiver.

1           23.     The integrated circuit of claim 19 further comprising:

2 a further bondwire connected between the die and a ground.

1 24. The integrated circuit of claim 19 further comprising:

2 a further bondwire connected between the die and a thermal pad.

1 25. An integrated circuit comprising:

2 a semiconductor die;

3 a first bondwire electrically connected to the die and a periphery pad;

4 a second bondwire electrically connected to the die and the periphery pad,

5 wherein:

6 the first and second bondwires are operable to act as an

7 autotransformer to form at least a part of a circuit block comprised within

8 the integrated circuit.

1 26. An integrated circuit comprising:

2 a semiconductor die;

3 a first bondwire electrically connected to the die and a first periphery pad;

4 a second bondwire electrically connected to the die and a second periphery

5 pad, wherein:

6 the first and second periphery pads are electrically connected, and

7 the first and second bondwires are operable to act as an

8 autotransformer to form at least a part of a circuit block comprised within

9 the integrated circuit.

1 27. Please cancel claim 27 without prejudice or disclaimer.

AI  
CHD.

1 28. Please cancel claim 28 without prejudice or disclaimer.

1 29. Please cancel claim 29 without prejudice or disclaimer.

1 30. Please cancel claim 30 without prejudice or disclaimer.

1 31. Please cancel claim 31 without prejudice or disclaimer.

---

1 32. An integrated circuit comprising:

2 an amplifier formed on a semiconductor die, the amplifier having an

3 output port with an output impedance; and

4 an impedance matching circuit connected between the output port and an

5 external conductor, the impedance matching circuit comprising:

6 an inductor consisting of a bondwire connecting the output port to

7 the external conductor; and

8 a capacitor formed on the semiconductor die and electrically

9 connected between the output port and a ground;

10 wherein the impedance matching circuit matches the output impedance to

11 a desired load impedance.

N. R. H. BLACK P.E.

420 Miramonte Ave.

Half Moon Bay

CA 94019

1 33. An integrated circuit comprising:

2 an amplifier formed on a semiconductor die, the amplifier having an  
3 output port with an output impedance;  
4 a first bondwire having a first self-inductance, and electrically connecting  
5 the output port to a first external conductor;  
6 a second bondwire having a second self-inductance, and electrically  
7 connecting the first external conductor to a node on the die;  
8 a first capacitor having a first capacitance formed on the semiconductor  
9 die and electrically connected between the node and a ground; and  
10 a second capacitor having a second capacitance embodied on the  
11 semiconductor die and electrically connected between the node and a third  
12 bondwire, the third bondwire having a third self-inductance and electrically  
13 connecting the second capacitor to a second external conductor  
14 wherein:  
15 the first, second and third bondwires and the first and second  
16 capacitors match the output impedance to a desired load impedance.

1 34. The integrated circuit of claim 33 wherein:  
2 the amplifier is a radio frequency power amplifier.

1 35. The integrated circuit of claim 33 wherein:  
2 the first capacitor is connected to ground via a further bondwire.

1 36. The integrated circuit of claim 33 wherein:  
2 the further bondwire connects to a thermal pad formed within the  
3 integrated circuit.

1           37.    An integrated circuit comprising:  
2                   a semiconductor die; and  
3                   an inductor forming at least a part of a circuit block comprised within the  
4           integrated circuit, said inductor further comprising:  
5                   a first bondwire having a first self-inductance electrically connected to the  
6           die at a first circuit node and to an external conductor; and  
7                   a second bondwire having a second self-inductance electrically connected  
8           to the die at a second circuit node and to the external conductor.

*A2  
comp*

1           38.    The integrated circuit of claim 37 wherein:  
2                   the circuit block is an analog circuit.

1           39.    The integrated circuit of claim 37 wherein:  
2                   the circuit block is a radio frequency circuit

1           40.    The integrated circuit of claim 37 wherein:  
2                   the circuit block is selected from a list consisting of:  
3                   an intra-stage match, an input stage match, a tuned circuit, an oscillator, a  
4                   filter, and a pre-selector for a radio receiver.

1           41.    The integrated circuit of claim 37 further comprising:  
2                   a further bondwire connected between the die and a ground.

1           42.    The integrated circuit of claim 37 further comprising:  
2                   a further bondwire connected between the die and a thermal pad.



1           43.    An integrated circuit comprising:  
2                   a semiconductor die; and  
3                   an autotransformer forming at least a part of a circuit block comprised  
4                   within the integrated circuit, said autotransformer further comprising:  
5                   a first bondwire electrically connected to the die and a periphery pad; and  
6                   a second bondwire electrically connected to the die and the periphery pad.

1           44.    An integrated circuit comprising:  
2                   a semiconductor die;  
3                   a first periphery pad;  
4                   a second periphery pad electrically connected to said first periphery pad;  
5                   and  
6                   an autotransformer forming at least a part of a circuit block comprised  
7                   within the integrated circuit, said autotransformer further comprising:  
8                               a first bondwire electrically connected to the die and said first  
9                   periphery pad; and  
10                            a second bondwire electrically connected to the die and said second  
11                   periphery pad.

1           45.    An integrated circuit comprising:  
2                   a semiconductor die;  
3                   a first periphery pad;  
4                   a second periphery pad; and  
5                   a transformer to form at least a part of a circuit block comprised within the  
6                   integrated circuit, said transformer further comprising:

M-12367 US

7

a first bondwire electrically connected to the die and said first

8

periphery pad; and

9

a second bondwire electrically connected to the die and said second

10

periphery pad.

---

*12  
cont.*

N.R.H. BLACK P.E.

420 Miramonte Ave.

Half Moon Bay

CA 94019